Graphics Solutions for Professionals

Matrox PowerDesk-SE 2.04

Key Features Reference Guide

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Matrox PowerDesk-SE 2.04

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Introduction

Matrox PowerDesk-SE is a user interface that provides multi-display desktop management controls for Matrox graphics hardware. A robust and easy-to-use software suite, PowerDesk-SE offers unique-to-Matrox utilities for optimal management of your Windows desktop.

Matrox PowerDesk-SE is included with many Matrox display driver packages available on the Matrox Installation CD-ROMs provided with certain Matrox products and on the Matrox website at: **www.matrox.com/graphics/support/drivers**.

This document outlines the new multi-display configurations that are available in the latest release of Matrox PowerDesk-SE software included with the new Matrox 2.04 display drivers.

The PowerDesk-SE 2.04 unified display drivers* introduce new features to the Matrox Parhelia, Millennium P-Series, QID, Epica, and Extio series of graphics hardware.

* Display driver functionality for Matrox Millennium G-Series and MMS series graphics cards is provided with the 5.99 driver code base, which is not covered in this document.

Supported Graphics Hardware and Operating Systems

The new Matrox PowerDesk-SE 2.04 display drivers are available in a 2.04 SE unified driver package. These drivers are comprised of two driver code bases (2.04 and 5.99), which support the following Matrox graphics products with the Microsoft® Windows® operating systems listed below:

Matrox graphics cards supported with the 2.04 SE display drivers

Matrox graphics products	Display driver version	Joined mode support
Millennium P-Series	2.04	Yes
Parhelia series[1]	2.04	Yes
QID series	2.04	Yes
Extio series	2.04	Yes
Epica TC2, Epica TC4	2.04	Yes

Operating systems supported with the 2.04 SE display drivers

Operating system	32-bit Windows	64-bit Windows
Windows XP	√	√
Windows 2000	√	√
Windows Server 2000	√	
Windows Server 2003	√	√
Windows Vista XP display driver model	√	√

New features of the 2.04 SE display drivers are not available with the following products:

Matrox graphics products	Display driver version	Joined mode support (w/ Matrox Hybrid Display wizard)
Epica TC2-Lite	5.99	5.9x
MMS Series	5.99	5.9x
Millennium G-Series	5.99	5.9x

For other operating systems supported by these graphics products, please visit: **http://www.matrox.com/graphics/en/corpo/support/drivers/home.php**.

[1] Not including the following: Parhelia Precision SDT, Parhelia Precision SGT, and Parhelia HR256.

Joined Graphics Cards

The Joined graphics card option allows you to combine the displays powered by multiple graphics cards to create a variety of multi-display configurations.

Four joined modes are available with the PowerDesk-SE 2.04 display drivers:

a. Stretched mode across two graphics cards
b. Clone mode between two graphics cards
c. Twin-stretched mode with two graphics cards
d. Twin-independent mode with two graphics cards

Graphics cards can only be joined according to their multi-display capabilities. For instance, a DualHead® card can be joined with another DualHead card, and a quad-display card with another quad-display card.

The following DualHead and TripleHead Matrox products can be joined to create a single stretched Windows® desktop:

- Matrox Millennium P650 graphics cards
- Matrox Epica TC2
- Matrox Extio™ F1220
- Matrox Millennium P750[1]
- Matrox Parhelia™ graphics cards[1]

The following quad-display Matrox products can be joined to create a single stretched Windows® desktop:

- Matrox QID
- Matrox QID Pro
- Matrox Epica TC4
- Matrox Extio F1400
- Matrox Extio F1420

[1] TripleHead™ graphics cards are joined as DualHead, which means the third display is not operable when joined with another DualHead or TripleHead graphics card, limiting the number of available displays to four.

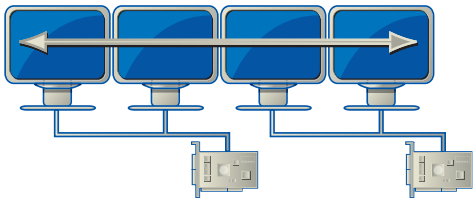
The following joined graphics card configurations are offered:

DualHead and TripleHead graphics cards Maximum: Four displays

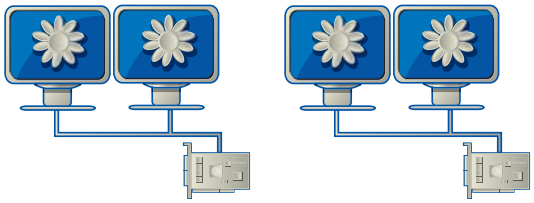
Using Joined graphics card mode enables two supported Matrox DualHead or TripleHead graphics cards to work in tandem in several Windows desktop combinations. The following joined DualHead and TripleHead graphics card configurations are available:

- **Stretched mode:** Stretch the Windows desktop across all displays powered by both graphics cards to form one large desktop. All displays use the same display settings and Windows treats them as if they are one large monitor. In this mode, the Windows taskbar is stretched across all of the bottom displays.

  The Stretched display configurations available with joined graphics cards are 3x1, 4x1, 2x2, 1x3, and 1x4.

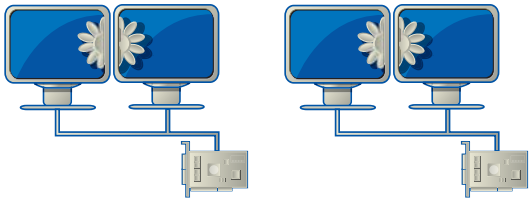


- **Clone mode:** View a copy of the output from the primary display on all of the other displays.

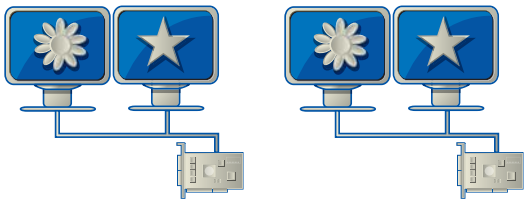


- **Twin-stretched mode:** Clone a DualHead stretched Windows desktop from the first graphics card to the displays powered by the second graphics card.

  The Twin-stretched display configurations available with joined graphics cards are 2x1 and 1x2.



- **Twin-independent mode:** View information independently on the displays powered by the first graphics card and clone the information to the displays powered by the second graphics card.



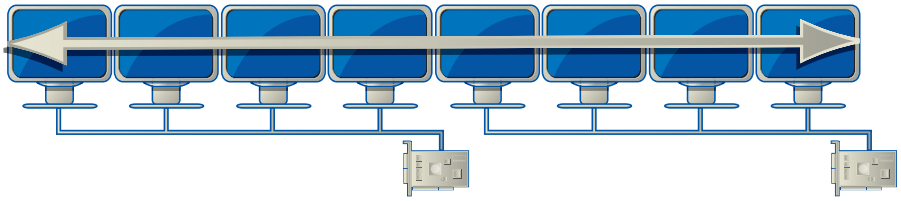
Quad-output graphics cards
Maximum: Eight displays

Matrox PowerDesk-SE version 2.04 display drivers include Joined graphics card mode, which enables two Matrox quad-output graphics cards from the same family to work in tandem in several Windows desktop combinations. The following joined quad graphics card configurations are available:

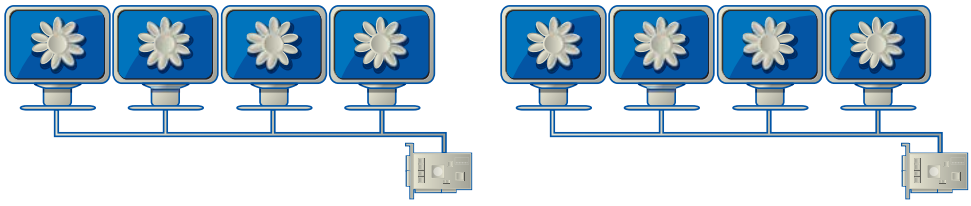
- **Stretched mode:** Stretch the Windows desktop across all displays powered by both graphics cards to form one large desktop. All displays use the same display settings and Windows treats them as if they are one. In this mode, the Windows taskbar is stretched across all of the bottom displays.

  The Stretched display configurations available with joined graphics cards are: 5x1, 6x1, 7x1, 8x1, 3x2, 4x2, 1x5, 1x6, 1x7, 1x8, 2x3, and 2x4.

  See page 10 for real-world examples of Stretched mode across 8 displays.



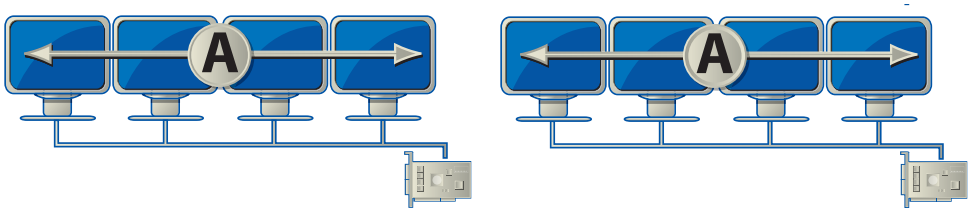
- **Clone mode:** Clone the output of the primary display to all of the other displays.



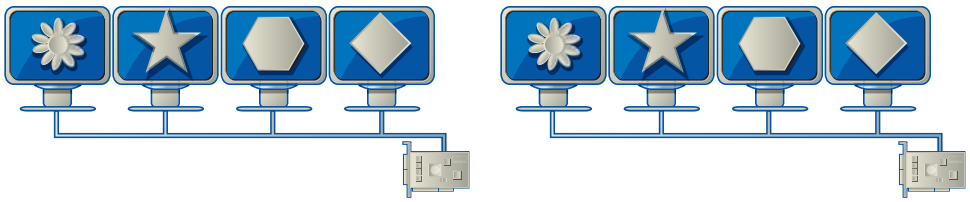
- **Twin-stretched mode:** Clone a quad-display stretched Windows desktop powered by the first graphics card to the displays powered by the second graphics card.

  The Twin-stretched display configurations available with joined graphics cards are: 4x1, 3x1, 2x1, 2x2, 1x2, 1x3, and 1x4.

  See page 12 for a real-world example of Twin-stretched mode across product families.



- **Twin-independent mode:** View information independently on the displays powered by the first graphics card and clone the information to the displays powered by the second graphics card.



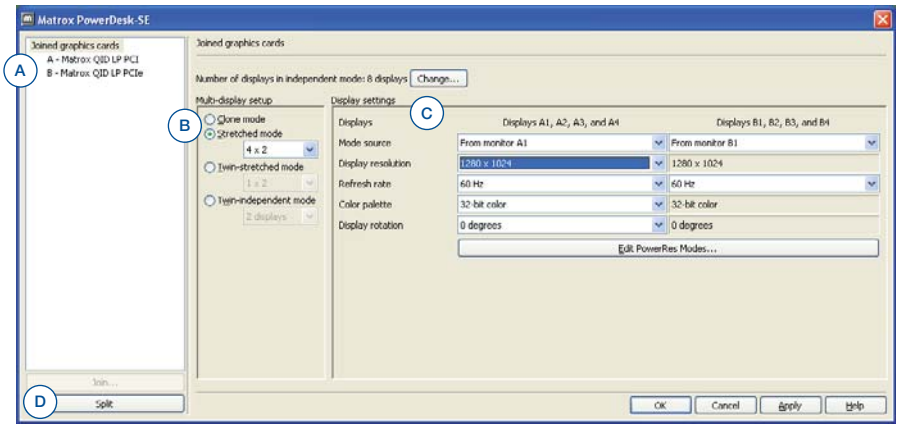
Examples of a Stretched mode display configuration:

A Windows desktop with eight displays in Stretched mode with a total desktop resolution of 6400x2400.

View the taskbar across all the bottom displays

Stretch your program across all eight displays for maximum viewing capacity.

The Matrox PowerDesk-SE 2.04 multi-display setup dialog box for joined graphics cards.

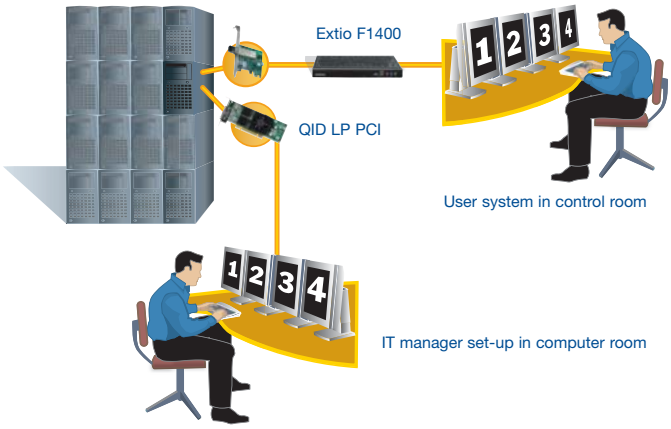


A – List of graphics cards available in Joined mode. In this mode, graphics cards are not accessible individually.
B – The available multi-display configurations.
C – Display settings based upon your configuration.
D – Denotes that Joined graphics card option is selected rather than the Split option.

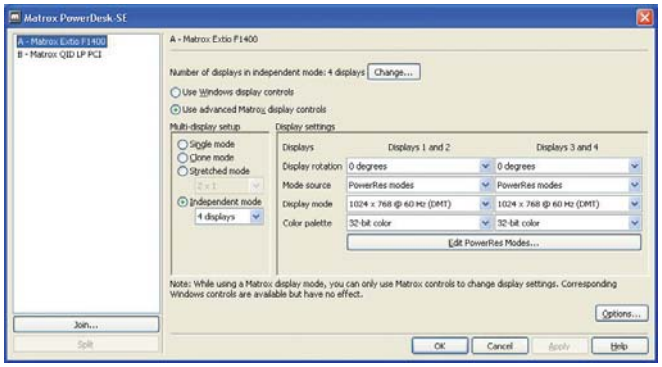
Example of a Twin-stretched mode display configuration:

The most common benefit of Twin-stretched mode is the ability to clone information from the displays powered by one graphics card to another graphics card or product from the same product class (i.e. DualHead to DualHead or quad to quad) in the same computer.

An example of the value of this feature is in a control room setting. In this environment, an Extio F1400 remote graphics unit can power 4 monitors up to 250m (820 ft) away from the computer to which the Extio is connected via its interface card. By adding a QID series graphics card to the same computer and enabling the Twin-stretched mode feature within PowerDesk-SE 2.04, an IT manager can access the user's system directly from the computer room for troubleshooting purposes. This eliminates the need to go all the way to the operator's station.



Matrox PowerDesk-SE 2.04 dialog box showing joined quad-capable products from different product families:



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Matrox Display Driver Consolidation

Matrox PowerDesk-SE 2.04 display drivers merge the interface of the 2.x SE drivers for quad cards and the 1.1x SE drivers for most Matrox DualHead and TripleHead products, including Millennium P-Series and Parhelia graphics cards.

The following products have migrated from the 1.1x SE and/or earlier 2.x SE feature sets to the enhanced feature set of the 2.04 SE display drivers:

- Matrox Millennium P650
- Matrox Millennium P650 Low-profile PCI
- Matrox Millennium P650 PCIe 128
- Matrox Millennium P650 LP PCIe
- Matrox Millennium P750
- Matrox Parhelia 256MB
- Matrox Parhelia 128MB
- Matrox Parhelia PCI 256 MB
- Matrox Parhelia DL256
- Matrox Parhelia APVe
- Matrox Epica TC2

Available configurations for these graphics cards include:

- Microsoft mode (default)
- Single mode
- Clone mode
- Stretched mode 2x1
- *NEW* Stretched mode 1x2
- Stretched mode 3x1†
- *NEW* Stretched mode 1x3†
- Independent mode - DualHead
- *NEW* Independent mode‡ - TripleHead†
- *NEW* Pivot all displays in Stretched mode (including TripleHead, if applicable)
- *NEW* Pivot only display 1 or display 2 in DualHead Independent mode (See page 14 for an example)
- *NEW* PowerRes modes
- *NEW* Joined graphics card mode

† TripleHead products only.

‡ Each display must be set to the same resolution and refresh rate.

An example of pivot display in DualHead Independent mode:

Take full advantage of programs optimized for landscape layout in one display and programs optimized for portrait layout in another.

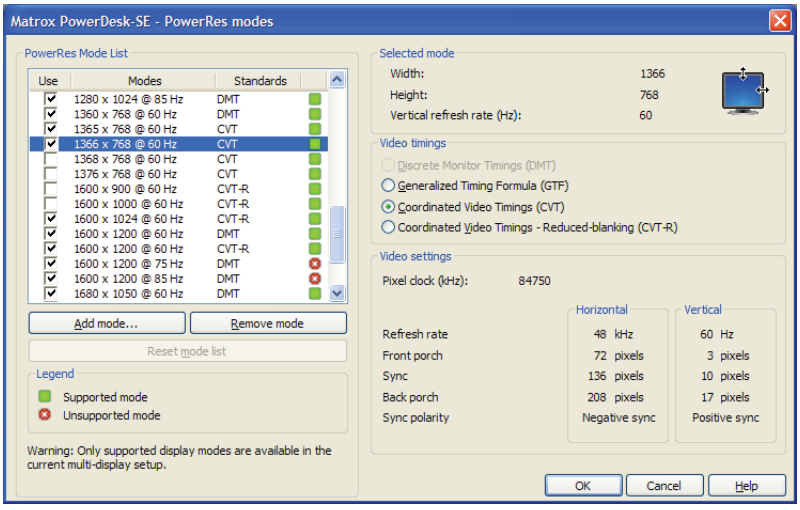
Matrox PowerRes

With Matrox PowerRes, you can add display modes supported by your graphics hardware. If a new mode is not supported, you will simply receive an error message. The PowerRes dialog box indicates the compatibility of the particular graphics product with the modes on the **PowerRes Mode List**. A green square indicates supported modes, and a red circle denotes unsupported modes.

PowerRes has been available for some time in PowerDesk 2.x driver packages for the following products:

- Matrox QID Series
- Matrox Epica TC4
- Matrox Extio F1400
- Matrox Extio F1420

With the PowerDesk-SE 2.04 display driver, PowerRes now supports Matrox Millennium P-Series, Parhelia series and Extio F1220* products. (See page 13 for supported products.)


Matrox PowerDesk-SE - PowerRes modes
PowerRes Mode List
Use
Modes
Standards
1280 x 1024 @ 85 Hz DMT
1360 x 768 @ 60 Hz DMT
1365 x 768 @ 60 Hz CVT
1366 x 768 @ 60 Hz CVT
1368 x 768 @ 60 Hz CVT
1376 x 768 @ 60 Hz CVT
1600 x 900 @ 60 Hz CVT-R
1600 x 1000 @ 60 Hz CVT-R
1600 x 1024 @ 60 Hz CVT-R
1600 x 1200 @ 60 Hz DMT
1600 x 1200 @ 60 Hz CVT-R
1600 x 1200 @ 75 Hz DMT
1600 x 1200 @ 85 Hz DMT
1680 x 1050 @ 60 Hz DMT
Add mode...
Remove mode
Reset mode list
Legend
Supported mode
Unsupported mode
Warning: Only supported display modes are available in the current multi-display setup.
Selected mode
Width: 1366
Height: 768
Vertical refresh rate (Hz): 60
Video timings
Discrete Monitor Timings (DMT)
Generalized Timing Formula (GTF)
Coordinated Video Timings (CVT)
Coordinated Video Timings - Reduced-blanking (CVT-R)
Video settings
Pixel clock (kHz): 84750
Horizontal
Vertical
Refresh rate 48 kHz 60 Hz
Front porch 72 pixels 3 pixels
Sync 136 pixels 10 pixels
Back porch 208 pixels 17 pixels
Sync polarity Negative sync Positive sync
OK
Cancel
Help

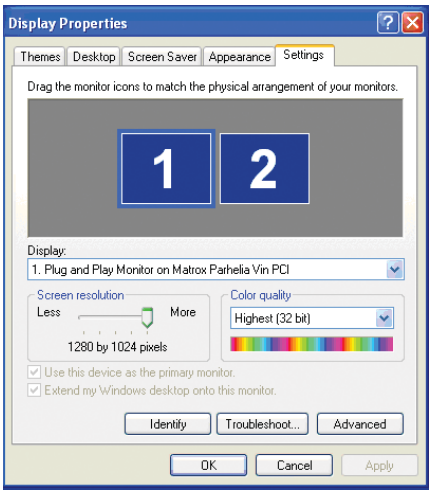
Note: Manual mode is possible up to a maximum display resolution of 1384x768.

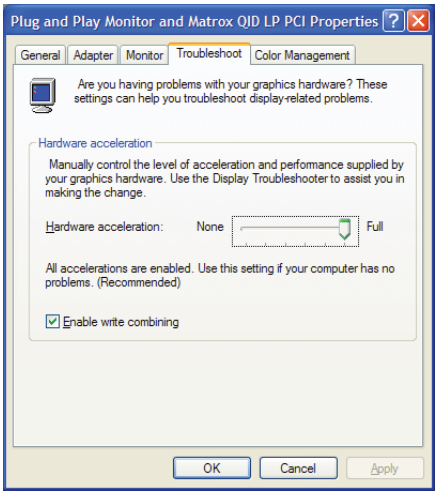
* 2.04 SE is the first available display driver for this product.

Matrox PowerDesk Support (with Hardware Acceleration set to “None”)

When hardware acceleration is set to “None,” the only resolution available is 640x480 with 16 colors. With Windows Server® 2003, this is problematic because hardware acceleration is set to “None” by default and previous versions of PowerDesk will not start.* With PowerDesk-SE 2.04 display drivers, you can now easily change the configuration of your Matrox products, regardless of these settings/environments.

With Windows 2000, Windows XP, and Windows Server 2003, Hardware Acceleration Settings can be found by clicking **Advanced** in the **Settings** property sheet in Windows **Display Properties**. The **Hardware Acceleration Settings** slider is located in the **Troubleshoot** property sheet.



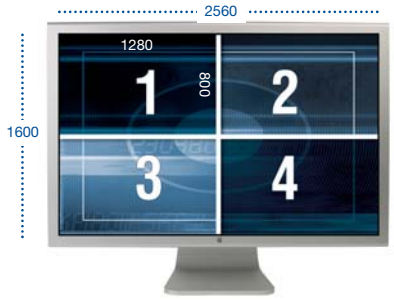

Plug and Play Monitor and Matrox QID LP PCI Properties
General
Adapter
Monitor
Troubleshoot
Color Management
Are you having problems with your graphics hardware? These settings can help you troubleshoot display-related problems.
Hardware acceleration
Manually control the level of acceleration and performance supplied by your graphics hardware. Use the Display Troubleshooter to assist you in making the change.
Hardware acceleration:
None
Full
All accelerations are enabled. Use this setting if your computer has no problems. (Recommended)
Enable write combining
OK
Cancel
Apply

* If you restart your computer in VGA mode by selecting the **F8** function key at boot up, PowerDesk will not run. The operating system is in a limited configuration and returns partial information about the system configuration. PowerDesk is therefore disabled under these conditions.

Matrox Desktop Divider

The Desktop Divider feature within Matrox PowerDesk enables you to more efficiently manage your multi-display desktop with different supported monitor layouts. This feature is particularly beneficial in multi-display stretched mode as it can be used to divide your desktop into a number of display “units” that can be managed as if they were individual displays.

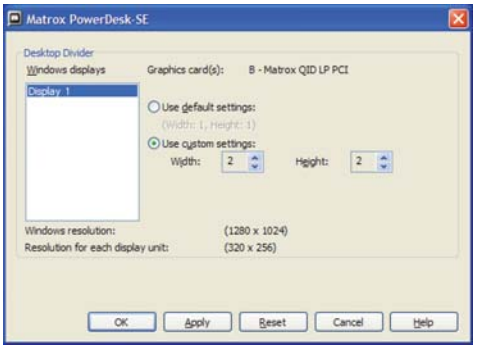
For example, it is possible to divide a desktop at a resolution of 2560x1600 on even a single monitor into a 2x2 layout of 4 “virtual monitors” at 1280x800 each. It this configuration, when you maximize an application, it will cover only the 1280x800 area of one of the “virtual monitors.”



Using Matrox Desktop Divider

To maximize applications within a single display unit:

A) Right-click the PowerDesk icon on the Windows taskbar then, select **Configure Desktop Divider**.
B) Select **Use custom settings** and enter the number of display units wide (width) by the number of display units high (height) for the layout you want. For example, in the example above, width = 2, height = 2.



For more information on resolution support of QID-series, Epica TC4, Extio F1400, and Extio F1420 products, see Quad independent and stretched mode support for display drivers version 2.03 and above.

PowerPoint Support for Stretched Desktops

The Desktop Divider feature of the PowerDesk-SE 2.04 display drivers allows you to view a Microsoft PowerPoint® presentation on a single display unit of a multi-display stretched desktop.

Without PowerDesk-SE 2.04, PowerPoint presentations can only be viewed centered between the displays of a stretched desktop, which creates a less than optimal viewing layout.

The new 2.04 SE PowerPoint feature resolves this limitation by providing the flexibility to view a presentation within a single display unit of the stretched desktop configuration. When a PowerPoint presentation begins, PowerDesk-SE 2.04 prompts you to select the display unit on which to view the presentation.

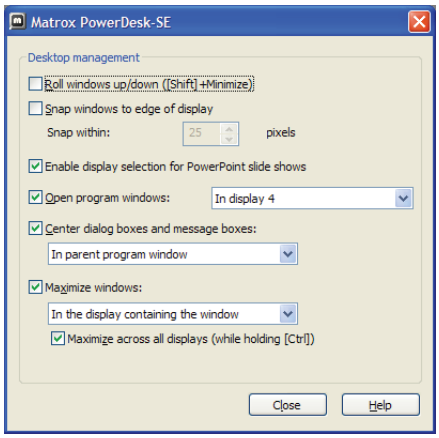
For information on sub-dividing a display into multiple display units, see the Matrox Desktop Divider section on page 17.

PowerPoint presentation running in stretched desktop mode without the PowerDesk-SE 2.04 display driver feature.

PowerPoint presentation running in stretched desktop mode with the PowerDesk-SE 2.04 display driver feature.

Configuring the desktop to view a PowerPoint presentation in a defined display unit.

1) In PowerDesk Desktop Management, make sure the **Enable display selection for PowerPoint slide shows** box is selected.



2) Start the PowerPoint slide show. When prompted, select the display unit on which you want to view the slide show. It can now be viewed in full-screen on a display or in a section of a display.

Administrator Rights

For corporate security, administrator rights are required to access Multi-Display Setup.

Matrox PowerDesk-SE 2.04 limits functionality when using a Guest user account, preventing the **Multi-Display Setup**… control panel from working.

Note: This feature can be disabled if desired.

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